19990406.ba v02_n493.bam.990406 v02_n494.bam.990406

>From ???@??? Tue Apr 06 08:37:51 1999
Message-Id: <199904061013.FAA11916@sco.theporch.com>
Date: Tue,  6 Apr 1999 05:12:53 CDT
From: Old Tube Radios <boatanchors@theporch.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: BOATANCHORS digest 2493

BOATANCHORS Digest 2493

Topics covered in this issue include:

---
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
To: Old Tube Radios <boatanchors@theporch.com>
From: Sandy W5TVW <ebjr@worldnet.att.net>
Subject: Re: Another Source of RFI
Message-Id: <19990406020535.DEKB26438@LOCALNAME>
Date: Tue, 6 Apr 1999 02:05:35 +0000

At 11:58 AM 4/5/99 -0400, you wrote:
>The FCC is always very interested in reports of equipment that
>violates the Part 15 radiated and conducted RF emissions
>requirements.  Their enforcement is (to some degree) based on
>manufacturers ratting on each other.
>
>
        Another section of Part 15 deals with the "bain" of a lot of amateurs: the VCR!  The "sticker"  (actually cast into the case plastic in some instances) also states that "this device may be interfered with" by other devices and that, in so many words, the owner has to put up with it.
        Sort of a disclaimer to dodge poor out of band rejection and very poor shielding of the VCR inputs!  Something to bring up to a video nut who claims the ham is wrong in all cases!  The statement also appears in many cordless phone manuals as well!  (For you 6 meter AM buffs out there!)

73,
Sandy W5TVW

---
Message-Id: <199904060227.WAA23045@flash.naxs.net>
From: "Barry L. Ornitz" <ornitz@tricon.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: High Voltage Coupling Capacitors
Date: Mon, 5 Apr 1999 22:26:02 -0400

Modern film capacitors for "across the line" AC use are rated for 250 Vrms or about 700 volts peak- to- peak.  An added safety factor will generally allow them to survive peak transients of 1500 volts.  However, they should not be used for steady DC at these voltages.

In any of the Heath monitor scopes and panadapters, always increase the working voltage on the capacitor to 2 kV.  The 1600 volt units just do not last very long.  Occasionally you can find high voltage capacitors made by Plastic Capacitors at hamfests.  These are excellent units.

        73,  Barry L. Ornitz     WA4VZQ     ornitz@tricon.net

---
Message-Id: <199904060251.TAB02406@mail-gw5.pacbell.net>
From: "Arden Allen" <gumbear@pacbell.net>
To: Old Tube Radios <boatanchors@theporch.com>
Cc: <boatanchors@theporch.com>
Subject: Re: Another Source of RFI
Date: Mon, 5 Apr 1999 19:49:07 -0700
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit

It seems to me inspection of the noisy power supply should reveal a Part 15 (or whatever is required) sticker. Without the sticker I would contact the factory and obtain the name of the Compliance Manager (or whatever his title is) and ask for a copy of the Certificate of Compliance that was submitted to the FCC, or is kept on file, if such is required. If that doesn't get results then ask the cable company engineer what basis he used to determine that the power supplies were in compliance. Whatever you come up with, the FCC would be interested to know. They, like any bureaucracy, are more likely to pay attention to someone who shows they mean business and follow through on it.

Arden Allen KB6NAX Vallejo, CA gumbear@pacbell.net

---
Date: Mon, 5 Apr 1999 21:32:54 -0500 (EST)
From: "Roberta J. Barmore" <rbarmore@indy.net>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Fun with the Eddystone
Message-ID: <Pine.SUN.3.96.990405211028.28703C-100000@indy3>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hi, Hue!

I don't know about your 540, but the Eddy 640 has a 1620 kc IF (and only covers from 1700 kc up, though the refence lists an LF version and doesn't mention the IF of it). Could be the 540 is dodging the IF with that hole in the MW coverage?

...Osterman's book has a nice section on the Eddystone sets. 680X, 730/4, 750, 840A, 910 and the ham-band-only 888A ('bout a hundred UK Pounds used *if* you can find one, Fred sez) all have that classic Eddystone look. Man, picture one of those paired up with the

second-generation Millen VFO, a Millen 90800 or 90801 exciter (and, if you're Watt-hungry, the Millen PA, etc.): transatlantic smooooth....! With a surprisingly unified look--parallel evolution at work, perhaps, as the dial mechanisms are quite different.

...Ah, but my affections are torn--Fred also covers the nifty Australia-made AWA CR-6B, with a unique appearance (Collins meets RCA, only better) and even greater scarcity! I daren't even look at the Marconi, Murphy and Rees Mace Marine pages....

73,
--Bobbi

KB9GKX "RJ" rbarmore@indy.net Roberta J. (Bobbi) Barmore
FISTS #3388 * G-QRP #10001 * ARRL * RSGB * WIA
Appreciator Of Vacuum-Tube Ham Gear and Vintage Keys

---

Date: Mon, 5 Apr 1999 23:20:00 -0400
From: don merz <71333.144@compuserve.com>
Subject: BA Odd Ends FS
To: Old Tube Radios <boatanchors@theporch.com>
Message-ID: <199904052322_MC2-709F-D246@compuserve.com>
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit
Content-Type: text/plain; charset=us-ascii
Content-Disposition: inline

Boatanchors And Such For Sale

CONTACT: Don Merz, N3RHT, 47 Hazel Drive, Mt. Lebanon, PA 15228
71333.144@compuserve.com

Hallicrafters S-38D receiver. Entry-level general coverage radio for SWL and ham use with large slide-rule dial. Has some scratches on sides but front panel is very good. All original including knobs and clean dial. Dial strings intact. Paint needs buffed out to remove surface blemishes. With original cardboard back and original "Owner Operating Guide S-38D." Last of the S-38 line. Untested. $45

Military Navy morale receiver "Model 6000-BAC" made under Navy contract N-140S 70560A". That's what the labeling on the front panel says anyway. This is a small 8x10x12 Navy gray box with flip-up lid. The lid was supposed to hold a chart or manual inside but that is missing. The left front panel has an airplane-style dial with a square dial face. The BCB is on the top half of the dial and "shortwave" is on the bottom half. The radio covers 550-1500kc and 6 to 16 mc. There is no bandspread or BFO. In fact, there are exactly 4 controls: Band: BC or SW, Volume/Off, and a 110VAC/DC-6VDC switch, plus the tuning

control. Either this thing is brand new or the case has been re-painted. But the match to the front panel is perfect if this is a repaint. The case also has a leather handle in excellent condition. The right side of the front panel is louvered with the speaker behind the louvers. This radio works as good as it looks and is a hot little receiver. Excellent or near-mint. $130

Heathkit OL-1 3" oscilloscope. Small unit in gray cabinet. Needs cleaned but should clean up to be in excellent condition. Gets trace but has hum on trace and and probably needs other tweaks. All original. As-is. $20

ACR-5 receiver racks--SNAFU CITY. I have 2 ARC-5 command set receiver racks--one single and one triple. The single is in nice original shape with some paint dings, though it is missing the fuse cover. The triple has a home-made cover over the back of the rear connector panel (but who ever sees the back of the rack anyway?) and some paint dings. Neither one has a shockmount. I would trade both of these for a genuine ARC-5 (not SCR-274N) double receiver rack with shockmount. Or I would trade either one of these for a double receiver rack without shockmount. Or I will buy your double receiver rack from you if you want to sell it. Any help with this snafu appreciated.

Military R-4A/ARR-2 command set homing receiver. This WWII-vintage radio fits into one command set receiver rackspace. It is a special-purpose VHF set designed for receiving a beacon for returning aircraft to home in on. Very nice original condition. With original dynamotor--a G.E. Type 6936 unit "made for Aircraft Radio Corporation." The dyno end-bells have some big paint chips and a few small dings. Untested. All original. As-is. $50

Link Frequency Meter Type 2051A. Designed for measuring FM Deviation and RF Input on 2 crystal-controlled channels. One crystal is included and it is around 154mc. Has built in whip antenna and a 0-150 microamperes DC meter marked "15 KC Full Scale." Blue hammertone front panel and gray hammertone cabinet are near-mint with no significant marks of any kind. Inside is top quality construction with the best of everything, ceramic tube sockets, etc. The tube lineup is 4-1L4 tubes. Designed for battery operation with connectors and space allowed for inside for batteries. Small--about 6"x6"x9". Untested. All original. As-is. $25

Heath IB-28 impedance bridge. Same old Heath impedance bridge electronics in modernized tan cabinet. Beautiful cosmetic condition. Untested. Complete. All original. With manual copy. $35

Leeds and Northrup capacitor 416614. This is a 12"L x 6"W x 8" H wooden box with a slate (I think) top that has 6 knife-switches and 2 binding posts mounted on it. The wiring between these switches and posts is engraved on the top. The arm of each SPDT knife switch is connected to one end of a capacitor. The cap can be switched onto either binding post connection. Absent any combinations (many are possible), the 5 cap values marked on the box are .05 MFD, .05 MFD, .2 MFD, .2 MFD and .5 MFD. The top has a pencil-eraser-sized chip out of one

corner. The wooden box also has a big ding at the bottom at that corner. This may have been used to set up certain audio characteristics in a radio station. A tag that was on it was marked "Sound Room Number 36." Definitely unusual. As-is. $35

CONTACT: Don Merz, N3RHT, 47 Hazel Drive, Mt. Lebanon, PA 15228
71333.144@compuserve.com

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Message-Id: <3.0.6.32.19990405235327.007addb0@mail>
Date: Mon, 05 Apr 1999 23:53:27 -0400
To: Old Tube Radios <boatanchors@theporch.com>
From: David Newkirk <dpnewkirk@home.com>
Subject: Detective Work [Was Re: Line Voltage]
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Morris Odell wrote of a dead mantel radio he was asked to fix:

>Experienced readers will by now have diagnosed a shorted output transformer
>primary or similar. In fact the fault was a gooey 0.001 uf waxed paper cap
from
>the plate of the 6AQ5 to ground, which was a dead short. Replacing it brought
>the set to life.
>
>What I thought was interesting was the post mortem. The shorted cap had the
>effect of placing the output transformer primary across the B+ line and
raising
>B+ current to nearly 4 times normal. Surprisingly neither the 6V4
rectifier nor
>the output transformer were damaged, probably because of the limited time
the
>set was turned on in unworking condition.

Some years back, I received from an acquaintence, as part of a raft of "radio junk" from his deceased brother, a Hallicrafters all-wave set that lit up properly and had HV, but put out absolutely no audio -- not even the residual hum of the "power transformer talking to the [immediately adjacent] output transformer" type. (I wish I could report the model number, but the thing currently resides at the absolute back of what we call our Deep Weird Closet and it'd take me a half hour of box shifting to get a look at it. Suffice it to say that it looks like an S-51 with the slide-rule dial of an S-38E; I recall a chassis date stamp of 1953; think it's an 8R40 or suchlike--not a mainstream ham product.)

To shorten the long story, voltage measurements revealed no B+ on the output tube (a 6K6GT). That told me that the primary of the output transformer was gone -- and sure enough I soon found a gooey, shorted

plate-to-ground capacitor exactly as Morris found. (BTW, what's the purpose of these caps? To keep down high-pitched noises, or kill parasitics in the AF stage? I've pored through Langford-Smith and other sources without finding the answer; many texts just slavishly include this cap without saying what it does.) On replacing the transformer, I was pleased to find that the set, and the  6K6GT, still worked acceptably well -- although I had been pleased to discover, among the boxes of stuff associated with the Hallicrafters, several replacements, including a 6K6GT, for the some of the tubes in the radio.

Thinking over the chain of events as Morris did, I was surprised that the radio's 5Y3GT rectifier was in such good shape after the AF transformer shorted. (There was no choke to blow; this low-end job uses a big, low-value resistor instead of a choke. With that small speaker, *what* hum? :-D) And then I took another look at the set of "replacement" tubes, and the picture fell together.

If I recall correctly, some, if not all, of the tubes, a 6SC7, a 6K6GT and a 5Y3GT, had Hallicrafters labels -- they had come with the radio! The owner had replaced them all, probably one at a time, to no avail. So I think the scenario went something like this:

The capacitor shorts, killing the set's audio. Soon afterward, *before the AF transformer dies*, the owner attempts to troubleshoot the thing by replacing tubes. He pops the hinged top and sees (and maybe smells--you know, that distinctive, tangy, "power tube in trouble" smell?) the 5Y3GT, its plates glowing red and the top of its envelope fluorescing with that blue corona that says, "Turn this thing off, quick!" Of course, the 5Y3GT is the symptom-bearer, so it must be fault -- he puts in another one. Right about at this point, the AF transformer opens, taking the heat off the 5Y3GT.

Hey, replacing the 5Y3GT was the thing -- it's no longer glowing. But the radio's still dead. So he replaces the 6K6GT and the 6SC7 (BFO/first AF), in what order I don't know. The radio stays dead, and, stymied, he packs it away -- with, as I discovered in the other boxes, Novice-class study materials that apparently, according to his brother, didn't pan out, and a slew of radio/TV repair course books, unopened, in unbroken cellophane wrappings.

I've since given away the books and oddments of parts and such, but I still have the radio, and it does a nice job on AM and moderate-to-strong shortwave broadcasters. It's even okay on CW (nope, no crystal filter) and SSB if you retune it once in a while. (Surprisingly, both 6K6GTs survived.) Every time I use it, I think, with great sympathy, of how frustrated that guy must have been to get right to the verge of really getting into this radio stuff only to run up against such a problem *before* developing the troubleshooting skills necessary to solve it. Sure, a repair shop could have come to the rescue -- but I think he wanted to learn and master radio.

>From a personal victory standpoint, a local Elmer could have made all the
difference in the world.

73,

Dave Newkirk, W9VES
dpnewkirk@home.com

---

Message-ID: <3709881A.C3B53B15@txdirect.net>
Date: Mon, 05 Apr 1999 23:05:46 -0500
From: Bill <billross@txdirect.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
CC: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: BC-610 help/info needed
Content-Type: text/plain; charset=koi8-r
Content-Transfer-Encoding: 7bit

Phil Mills wrote:
>
> I'm trying to put the finishing touches on my BC-610F project and get
> it working with the BC-614E speech amplifier.  The BC-614E is working
> okay but I had to build a cable to connect it to the
> BC-610.....therefore,
> it is missing whatever is in the JB-70 junction box that keys the BC-610

Phill:  As I remember the JB-70 was only necessary because it provided
keying of the 610 Plate when running RTTY and the PTT was included only
incidental to simplify circuits.
>
> I've thought of making a minor wiring change in the BC-614E so that the
> push-to-talk closes the key jack circuit....has anyone done this?

This is how most key the 610 for phone.  Keying is usually done directly
through the BC-614E properly modified.  Many of the 614s are modified to
include phone patch circuits.

>
> Finally, any microphone recommendations?  Somehow I think that my
> amplified base D104 is overkill.  What about a carbon microphone?

You can use a carbon mike.  The original CM for the 610 looked like an
old upright telephone with a bar in place of the receiver hook for PTT.
The audio wasn't that bad either.  An UN-amplified D104 works very well.

Bill Ross K5LLK

---

Message-Id: <199904060424.VAA13582@mail-gw5.pacbell.net>
From: "Arden Allen" <gumbear@pacbell.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: High Voltage Coupling Capacitors
Date: Mon, 5 Apr 1999 20:42:46 -0700
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit

Hi Barry;

> Modern film capacitors for "across the line" AC use are rated for 250 Vrms
> or about 700 volts peak- to- peak.  An added safety factor will generally
> allow them to survive peak transients of 1500 volts.  However, they should
> not be used for steady DC at these voltages.

You overlooked on important factor.  The across-the-line capacitors are really rated to withstand 1500VAC (2121V pk) and 2500VAC (3535 V pk) (depending on class) Hi-Pot testing, usually for a minute, as required to meet UL, CSA, TUV and bushels of other safety agency requirements. Products are 100% tested for dielectric withstand capability as a screen for defects, usually associated with product assembly errors.  So the caps gotta take it in the shorts (twisted pun intended) to survive.  I have 250VAC caps in both of my Heathkits and no problems......yet.

Arden  Allen   KB6NAX   Vallejo, CA   gumbear@pacbell.net

---

Message-Id: <199904060424.VAA13569@mail-gw5.pacbell.net>
From: "Arden Allen" <gumbear@pacbell.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: HP 524 Battleship Frequency Counter
Date: Mon, 5 Apr 1999 20:10:40 -0700
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit

Hi Morris;

A nice description of 524's.  My first "affair" with a 524B was in the Navy ('65) with the militarized version.  That's what led me to my recent acquisition of a 524C.  It's waiting for some revitalizing ointment to be rubbed into all the right places.  I would like to get a couple of plugins

for it in addition to the one I have now, the 100-500 Mc converter.  Anyone got 524 plugins that need a new home?

Arden  Allen   KB6NAX   Vallejo, CA   gumbear@pacbell.net

---

Message-ID: <37098CD8.A44033A3@vifp.monash.edu.au>
Date: Tue, 06 Apr 1999 14:26:00 +1000
From: Morris Odell <morriso@vifp.monash.edu.au>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Detective Work [Was Re: Line Voltage]
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Hi Dave,

I read your post with interest and amusement. I suppose there are not many of us around any more so familiar with these circuits and able to discuss them like this although the BA group is a wonderful source of knowledge and anecdotes.

> not even the
> residual hum of the "power transformer talking to the [immediately
> adjacent] output transformer" type.

As a result of certain manipulations (I hesitate to call them experiments) in my misspent youth, I was instantly able to recognize the hum in my radio as ripple from the overloaded power supply passing through the primary of the output transformer and being coupled into the speaker :-) Also, transformers talking to each other do so as soon as the power is applied. Ripple is delayed until the rectifier warms up...

> (BTW, what's the purpose
> of these caps? To keep down high-pitched noises, or kill parasitics in the
> AF stage? I've pored through Langford-Smith and other sources without
> finding the answer; many texts just slavishly include this cap without
> saying what it does.)

I have always thought it was both of these. In Australia people liked a mellow "tone" in their wireless - translated as a pole at about 5 KHz - and the capacitor provided something like that. A lot of radios of that period had top cut tone controls consisting of a 500K pot in series with a 0.1 mfd cap connected from the plate of the output valve to ground. Again as a result of the aforementioned manipulations I found that a 6V6 power amp lacking the capacitor makes a fine dandy transmitter. I seem to remember Hank van Cleef discussing the reason for that capacitor here once - maybe he will comment again.

I liked your Sherlock Holmes style reconstruction of the fault sequence - very appealing to a forensic doc!

73 de Morris VK3DOC

---

Message-ID: <37098D78.6D064C3@vifp.monash.edu.au>
Date: Tue, 06 Apr 1999 14:28:40 +1000
From: Morris Odell <morriso@vifp.monash.edu.au>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: HP 524 Battleship Frequency Counter
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Arden Allen wrote:

> Anyone
> got 524 plugins that need a new home?

or any that want a trip to the antipodes?

Morris

---

Date: Mon, 5 Apr 1999 23:31:35 -0500 (CDT)
Message-Id: <199904060431.XAA11087@dfw-ix1.ix.netcom.com>
From: n6nae@ix.netcom.com (Richard Humphrey)
Subject: A few R388 parts:
To: Old Tube Radios <boatanchors@theporch.com>

Spring cleaning in the Radio Wreck Room. Where does this stuff come from????? I think it multiplies in the dark, like the dust and the spiders.

Quite some time ago someone needed the pilot light bracket for their R388 project. This piece runs across the top of the front panel, holds the lamp sockets and is where the top cover attaches.

Well, I found one. Please respond if you still need it. Lottery in case of multiple replies.

I also have just a few other bits, such as the dial escutheon, some of the coils, band switch pieces, IF can or two and I think one handle. The rest went to various sets needing organ donors.

Sorry, I do NOT have PTO, front panel, S-meter, power tranny, or tuning

slugs.

BTW, for the serial number archive, my working one is #8.
Richard

---

Message-Id: <199904060437.VAA19687@mail-gw5.pacbell.net>
From: "Arden Allen" <gumbear@pacbell.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Detective Work [Was Re: Line Voltage]
Date: Mon, 5 Apr 1999 21:37:57 -0700
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit

Sob, sob,.....sniffle,.......brszghtcvzxt!!! (blowing nose).

Oh, what a sad story. Well told. Did I tell you about the beautiful console I demolished that didn't play only to find a burned resistor while gutting the chassis. Talk about feeling stupid..... 73.

Arden Allen KB6NAX Vallejo, CA gumbear@pacbell.net

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Date: Mon, 5 Apr 1999 23:42:18 -0500 (CDT)
Message-Id: <199904060442.XAA01419@dfw-ix4.ix.netcom.com>
From: n6nae@ix.netcom.com (Richard Humphrey)
Subject: Available: one bug weight
To: Old Tube Radios <boatanchors@theporch.com>

I have found in the bottom of a box, one bug weight. Please control your excitement!

This one is a disc with a round hole through the middle for keys with the weights on a rod. Roughly about a #8 screw sized hole. Nickel plated thumb screw.

The other type key has the rectangular weights that slide on a bar. If you have that kind, this won't work.

Key dealers probably get $50 for one of these. Nuts to them. First shout can have it.
Richard

---

Message-ID: <37099936.50CF@pacbell.net>
Date: Mon, 05 Apr 1999 22:18:46 -0700
From: Morton Jones <mortjonz@pacbell.net>

MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
CC: milsuplus@qth.net
Subject: FS/ TCS Transmitters and Receivers
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

I am selling off My TCS stuff, I will Pack this stuff with no Charge to the Buyer. You will pay the shipping. All are Untested.

#1. TCS-13 Radio Receiver looks Complete inside and out. Very nice Cabinet the Front is ok some scratches near the Tunning Knob. $65.00

#2. TCS Receiver Looks complete needs cleaning up, No Data Plate. Comes with a "Haywired" Power Supply. $40.00

#3. TCS Transmitter, Parts Rig no Data plate comes with shock mounted Plate some parts missing some tubes still there. Has Cabinet one knob is missing,  Antenna Current Meter is missing.  $15.00

#4  TCS Receiver parts rig, No Data Plate, Tunning Knob is missing. Looks complete inside, Paint is rough. $20.00

#5  TCS 12 Transmitter, Looks very complete inside and outside nothing is missing. Would clean up nice.
Has Collins Data Plate on Front Panel and Large Data Plate on the top of the Cabinet both say Collins.  $60.00

#6  TCS 12 Transmitter, Looks complete inside and outside, Made by Collins. Small Data Plate on Front Panel is missing but the big Data Plate on top of Cabinet is there and says Collins.
Front Panel paint is ok, but Cabinet needs new paint.  $50.00

Thanks for reading, Mort W6KLG Zip code 92065

---
Date: Mon, 5 Apr 1999 23:55:05 -0700 (PDT)
From: John Kolb <jlkolb@cts.com>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: to be or not to be
Message-ID: <Pine.SCO.4.05.9904052305260.6290-100000@sd.cts.com>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

On Mon, 5 Apr 1999, Bob Duckworth wrote:

> In looking at filter options on a newer Racal,

> the newer digital mode filters (low phase distortion)
> all had much broader skirts (smaller 6dbwidth/60dbwidth
> numbers) than the SSB. The question is, do the
> older small ratio mechanical filters have good phase response?

How good is good?  :)

>From the catalog sales sheet for the "New F455Z-23C/24C &
F500Z-22C/23C SSB Mechanical Filters" (New = 1970)

"(4) envelope delay characteristics smooth enough and flat enough
for the transmission of high speed data without equalization"

These filters are speced at 2.85 kHzmin, 3.1Khz typical @ -3 db,
4.1kHz typical, 4.9 kHz max @ -60 db, so are very steep sided
filters. The sales sheet and the filter data sheets do not
have any spec for phase response, however.

The group delay characteristics of a disk-wire mechanical
filter depend mainly on the number of poles in the filter
and the fitler bandwidth. From a chart for normalized group
delay of a 9 pole chebyshev filter, the filter has a delay
of 8 at the center freq, 9 @ 60% of the 3 db points, 13
at the 80% point, and 27 @ the 100% (3 db point), back
down to 6 @ 110% and 3 @ 120%. So if the filter is
50% wider than the required bandpass, group delay will
be pretty constant.

Some of Collins newer torsional filters have built in
LC networks to equalize delay, but the curves still show
that the sholder area of the filter has extreme changes
in delay compared to the center 70% of the 3 db bandwidth.

I've got a couple of these equalized filters, but
unfortunately, they are 460 kHz center freq, and 13.4 kHz
wide. Haven't found a use for them yet  :)

John  KK6IL  jlkolb@cts.com

---
Date: Tue, 6 Apr 1999 06:12:35 -0400 (EDT)
From: Sandra L Knepper <slkst29+@pitt.edu>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Old Tube Radios <boatanchors@theporch.com>, owner-boatanchors@theporch.com
Subject: Re: Detective Work [Was Re: Line Voltage]
Message-ID: <Pine.GSO.3.96L.990406061056.5854C-100000@unixs1.cis.pitt.edu>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

I wonder if anyone can tell us whether when a bypass capacitor hung on to
the B+ line of the output transformer would have a catastropic failure -
poof it's gone or would it begin to "leak" and ultimately short out.
Perhaps, this event was occurring over many months.  I suspect so!

Dave, W3ST

On Mon, 5 Apr 1999, David Newkirk wrote:

> Morris Odell wrote of a dead mantel radio he was asked to fix:
>
> >Experienced readers will by now have diagnosed a shorted output transformer
> >primary or similar. In fact the fault was a gooey 0.001 uf waxed paper cap
> from
> >the plate of the 6AQ5 to ground, which was a dead short. Replacing it brought
> >the set to life.
> >
> >What I thought was interesting was the post mortem. The shorted cap had the
> >effect of placing the output transformer primary across the B+ line and
> raising
> >B+ current to nearly 4 times normal. Surprisingly neither the 6V4
> rectifier nor
> >the output transformer were  damaged, probably because of the limited time
> the
> >set was turned on in unworking condition.
>
> Some years back, I received from an acquaintence, as part of a raft of
> "radio junk" from his deceased brother, a Hallicrafters all-wave set that
> lit up properly and had HV, but put out absolutely no audio -- not even the
> residual hum of the "power transformer talking to the [immediately
> adjacent] output transformer" type. (I wish I could report the model
> number, but the thing currently resides at the absolute back of what we
> call our Deep Weird Closet and it'd take me a half hour of box shifting to
> get a look at it. Suffice it to say that it looks like an S-51 with the
> slide-rule dial of an S-38E; I recall a chassis date stamp of 1953; think
> it's an 8R40 or suchlike--not a mainstream ham product.)
>
> To shorten the long story, voltage measurements revealed no B+ on the
> output tube (a 6K6GT). That told me that the primary of the output
> transformer was gone -- and sure enough I soon found a gooey, shorted
> plate-to-ground capacitor exactly as Morris found. (BTW, what's the purpose
> of these caps? To keep down high-pitched noises, or kill parasitics in the
> AF stage? I've pored through Langford-Smith and other sources without
> finding the answer; many texts just slavishly include this cap without
> saying what it does.) On replacing the transformer, I was pleased to find
> that the set, and the  6K6GT, still worked acceptably well -- although I
> had been pleased to discover, among the boxes of stuff associated with the

> Hallicrafters, several replacements, including a 6K6GT, for the some of the
> tubes in the radio.
>
> Thinking over the chain of events as Morris did, I was surprised that the
> radio's 5Y3GT rectifier was in such good shape after the AF transformer
> shorted. (There was no choke to blow; this low-end job uses a big,
> low-value resistor instead of a choke. With that small speaker, *what* hum?
> :-D) And then I took another look at the set of "replacement" tubes, and
> the picture fell together.
>
> If I recall correctly, some, if not all, of the tubes, a 6SC7, a 6K6GT and
> a 5Y3GT, had Hallicrafters labels -- they had come with the radio! The
> owner had replaced them all, probably one at a time, to no avail. So I
> think the scenario went something like this:
>
> The capacitor shorts, killing the set's audio. Soon afterward, *before the
> AF transformer dies*, the owner attempts to troubleshoot the thing by
> replacing tubes. He pops the hinged top and sees (and maybe smells--you
> know, that distinctive, tangy, "power tube in trouble" smell?) the 5Y3GT,
> its plates glowing red and the top of its envelope fluorescing with that
> blue corona that says, "Turn this thing off, quick!" Of course, the 5Y3GT
> is the symptom-bearer, so it must be fault -- he puts in another one. Right
> about at this point, the AF transformer opens, taking the heat off the 5Y3GT.
>
> Hey, replacing the 5Y3GT was the thing -- it's no longer glowing. But the
> radio's still dead. So he replaces the 6K6GT and the 6SC7 (BFO/first AF),
> in what order I don't know. The radio stays dead, and, stymied, he packs it
> away -- with, as I discovered in the other boxes, Novice-class study
> materials that apparently, according to his brother, didn't pan out, and a
> slew of radio/TV repair course books, unopened, in unbroken cellophane
> wrappings.
>
> I've since given away the books and oddments of parts and such, but I still
> have the radio, and it does a nice job on AM and moderate-to-strong
> shortwave broadcasters. It's even okay on CW (nope, no crystal filter) and
> SSB if you retune it once in a while. (Surprisingly, both 6K6GTs survived.)
> Every time I use it, I think, with great sympathy, of how frustrated that
> guy must have been to get right to the verge of really getting into this
> radio stuff only to run up against such a problem *before* developing the
> troubleshooting skills necessary to solve it. Sure, a repair shop could
> have come to the rescue -- but I think he wanted to learn and master radio.
> >From a personal victory standpoint, a local Elmer could have made all the
> difference in the world.
>
> 73,
>
> Dave Newkirk, W9VES
> dpnewkirk@home.com

>

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End of BOATANCHORS Digest 2493
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>From ???@??? Wed Apr 07 09:44:56 1999
Message-Id: <199904070416.XAA21245@sco.theporch.com>
Date: Tue,  6 Apr 1999 23:16:26 CDT
From: Old Tube Radios <boatanchors@theporch.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: BOATANCHORS digest 2494

BOATANCHORS Digest 2494

Topics covered in this issue include:

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Message-Id: <3.0.6.32.19990406075804.007ad040@mail>
Date: Tue, 06 Apr 1999 07:58:04 -0400
To: Old Tube Radios <boatanchors@theporch.com>
From: David Newkirk <dpnewkirk@home.com>
Subject: Re: Detective Work [Was Re: Line Voltage]
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

At 06:12 AM 4/6/99 -0400, Sandra L Knepper wrote:

>I wonder if anyone can tell us whether when a bypass capacitor hung on to
>the B+ line of the output transformer would have a catastropic failure -
>poof it's gone or would it begin to "leak" and ultimately short out.
>Perhaps, this event was occurring over many months.  I suspect so!

I'm guessing that it's a predictable outcome of a minimally rated capacitor situated right next to a very hot tube that sees plate-voltage peaks considerably higher than B+ -- and usually the highest B+ in the set, if there's a choice. Having once measured how the B+ in an NC-100X ramped way, way up and then down -- that fast 80 filament and a capacitor-input filter and those slow indirectly heated 6xx tubes -- I can imagine the tortures inflicted on that plate-to-ground cap. Thermal cycling rounds out the regimen of doom. And then...

"Suddenly, the phone rang" -- but as the comedian said, who ever heard of a phone ringing gradually?

73,

Dave Newkirk, W9VES
dpnewkirk@home.com

---

Date: Tue, 6 Apr 1999 07:48:36 -0500 (EST)
From: "Roberta J. Barmore" <rbarmore@indy.net>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Detective Work [Was Re: Line Voltage]

Message-ID: <Pine.SUN.3.96.990406074337.14607A-100000@indy1>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

FWIW, at least one of my sources--possibly Elmer Osterhoudt--in describing
a tube amp cautions the builder to *not* use a paper condenser for the
plate-to-gnd HF-killer.  EO does show a very old dodge, using a
large-value series rheostat with a mildly oversized condenser from the AF
O/P plate to ground to provide both a "tone control" (range from "muddy"
to "mildly muffled," perhaps?) and to prevent nasty HF spiking.

   73,
   --Bobbi

KB9GKX "RJ"  rbarmore@indy.net   Roberta J. (Bobbi) Barmore
      FISTS #3388 * G-QRP #10001 * ARRL * RSGB * WIA
   Appreciator Of Vacuum-Tube Ham Gear and Vintage Keys

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From: "Ben Hall"<kd5byb@wt.net>
To: Old Tube Radios <boatanchors@theporch.com>
Date: Tue, 6 Apr 1999 08:21:20 +500
Subject: Stuff for shipping costs
Message-id: <370a0a50.4349.0@wt.net>

Greetings all...  Was reading my mail when everything went poof.  So, could all
the people who responded to my earlier message respond again while I'm busy
strangling my ISP over the phone?

Thanks and 73,
Ben
---
Benjamin D. Hall, KD5BYB
e-mail:  KD5BYB@WT.NET

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To: Old Tube Radios <boatanchors@theporch.com>
Cc: boatanchors@theporch.com, owner-boatanchors@theporch.com, wa8mlv@juno.com,
        w8vrj1@juno.com, doowop6@juno.com
Date: Tue, 6 Apr 1999 10:42:54 -0400
Subject: Re: Line Voltage]
Message-ID: <19990406.104332.9046.1.KE8RN@juno.com>
From: ke8rn@juno.com

I'm forced to wonder why the designer did not simply put the 0.01 across
the primary of the audio output transformer, rather from the plate to
ground.  It would have the same material effect, but not have B+ across

it, thus reducing the strain on the capacitor a WHOLE BUNCH.  A secondary benefit, faliure of the capacitr would not have loaded down the B+.  The guy who desinged it probably went on to work on the Chevy Vega or New Coke.  73.

George KE8RN

On Tue, 6 Apr 1999 06:12:35 -0400 (EDT) Sandra L Knepper
<slkst29+@pitt.edu> writes:
>I wonder if anyone can tell us whether when a bypass capacitor hung on
>to
>the B+ line of the output transformer would have a catastropic failure
>-
>poof it's gone or would it begin to "leak" and ultimately short out.
>Perhaps, this event was occurring over many months.  I suspect so!
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>
>On Mon, 5 Apr 1999, David Newkirk wrote:
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>transformer
>> >primary or similar. In fact the fault was a gooey 0.001 uf waxed
>paper cap
>> from
>> >the plate of the 6AQ5 to ground, which was a dead short. Replacing
>it brought
>> >the set to life.



---

From: zeitler@ibm.net
Message-ID: <004001be803f$713a6560$e5292581@km3g>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Looking for outboard speech processor
Date: Tue, 6 Apr 1999 08:09:12 -0700
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Gents,

I am looking for another outboard speech processer for some vintage SSB gear. Daiwa RF-440, Ten Tec 234, Drake SP-75, MFJ 525, etc. etc.

Will be using it with an old SB-102 xcvr. Please respond with ur price, call, qth, and phone number. Pls reply via e-mail as I am not home much these days and my answering is broken.

73s for now

Lane Zeitler
Ku7i
San Diego
619-470-6528

---

Date: Tue, 6 Apr 1999 10:36:07 -0500 (EST)
From: "Roberta J. Barmore" <rbarmore@indy.net>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Old Tube Radios <boatanchors@theporch.com>, owner-boatanchors@theporch.com, wa8mlv@juno.com, w8vrj1@juno.com, doowop6@juno.com
Subject: Re: Line Voltage]
Message-ID: <Pine.SUN.3.96.990406101926.25744B-100000@indy1>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hi!

George asks why the designer didn't just hang the HF-killer condenser across the primary of the output transformer, and avoid having to withstand B+ (and the AF voltage swing riding on it).

Well, the designer's not as crazy as he looks. The usual condenser value here does roll off the audio highs (which makes the set seem less hissy and staticky and helps out the percieved response by an old rule of thumb that says audio bandwidth should be restricted proportionately at the high and low end--and most tabletop radios haven't got much bass), *but* it also knocks out a lot of supersonic grunge, kills any ambition the AF output tube might have about becoming an HF oscillator, and slows down nasty-fast spikes in the audio that would create high transient voltages on the transformer windings.

...And if we returned the "ground" end of the condsener to the B+, we'd be hoping our filter condenser looked like a really low impedance from, oh, 15kc up through visible light or ten meters, whichever comes first. Which the usual rolled-foil electrolytic does not; in fact, they've got a fair amount of inductance (especially older & low-cost ones). So the effectiveness of the HF-killer would be materially reduced by returning it to the B+ rail rather than ground. Only fix is to hang yet another (smallish) condenser across the filter (B+ to ground), of, say, 10X the

value of the HF-killer, and there's another nickle spent on a part; which the sensible maker of AA5s (etc.) will not spend.
   B+ rails *should* otta be at AC ground; but usually they're not all that good, especially for higher frequencies, unless extra effort is taken to make 'em be.

   73,
   --Bobbi

KB9GKX "RJ"  rbarmore@indy.net   Roberta J. (Bobbi) Barmore
      FISTS #3388 * G-QRP #10001 * ARRL * RSGB * WIA
   Appreciator Of Vacuum-Tube Ham Gear and Vintage Keys

---
Message-Id: <3.0.5.32.19990406100927.017aead0@earthlink.net>
Date: Tue, 06 Apr 1999 10:09:27 -0700
To: Old Tube Radios <boatanchors@theporch.com>
From: Jim Hill <jshillw6ivw@earthlink.net>
Subject: Re: Charging Batteries for Y2K Boatanchors.
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

After ruining a couple of marine/RV batteries, I started to look for info on properly maintaining these batteries. A good source of info is people who cater to environmentally conscious people who live off the power grid. They use solar power, etc. and a large battery bank. One such source is Real Goods, 966 Mazzoni St. Ukiah, CA 95482-3471. I think they may have moved, but their technical phone number is 707-744-2101, and e-mail address is realgood@well.sf.ca.us. If you are into this sort of thing, their Solar Living Source Book is very interesting. It covers far more than electrical power.

Getting back to your thread...  The Sourcebook mentions telephone batteries. Here are a few excerpts

"Lead Calcium or Telephone Company Batteries  ..Telephone companies have been upgrading much of their switching equipment from the old 48 volt relay type to newer solid state....the monster battery bank that ran the old equipment is either discarded or recycled....These are shallow cycle batteries that rarely experienced more than a 15% cycle in telephone service...Remember, even though the phone company batteries may be rated for 1680 ampere hours, you can use only 20% of that, or 336 ampere-hours." The Sourcebook had another paragraph titled "True Deep-Cycle Batteries".

Since these batteries are not true deep cycle batteries, they probably have different charging requirements. I suggest you phone the Real Goods tech. support number, and get their opinion.

The two best on-line information sources on deep-cycle batteries and chargers are www.amplepower.com  (emphasizes marine usage) and www.windsun.com . I finally bought a true deep cycle charger from a source specified by windsun, and bought an interesting book published through amplepower called "Living on 12 Volts with Ample Power".

Unless you are lucky, you probably won't get much info from telephone people. I worked at Hughes Aircraft, which is part of General Motors. Through a co-worker that transferred, I talked to some engineers that worked on the GM electric car. I thought I had a super source of info on deep cycle batteries and chargers. It soon became obvious that batteries and chargers had been specified and selected long ago by someone else, info probably was buried in some computer database, and these people were working on current problems and had no interest in old topics. Was I disappointed.

At 09:42 AM 4/5/99 -0500, you wrote:
>I am in the process of setting up a bank of 6 telephone stand by batteries.
>The cells are rated at 8 Amps for 165 hours. That should run the
>Hallicrafters SR-150 for a while, or perhaps the FPM-300.  I have dedicated
>an old Sears 6 amp battery charge to the project and have a digital voltage
>meter inline to monitor the process.   I thought there might be some old
>telephone men on the List that could give me the scope on charging these
>things.
>
>TNX and 73
>
>Jim Zellmer, KA0VSL
>
>

---
From: thompson@mindspring.com
Message-ID: <00ba01be805a$a422ab20$041f45cf@default>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Tymeter clock problem
Date: Tue, 6 Apr 1999 14:23:39 -0400

I use a Tymeter clock with my BA station but it has given up the ghost.  The motor is not working and without the motor the clock is useless.  I tried to fix it and find another but no luck.  If anyone has a Tymeter Numechron clock (without timer) I would be willing to buy it.   Either cash or have early Heath AM-1 SWR bridge to trade.

Dave K4JRB
thompson@mindspring.com

---

Date: Tue, 6 Apr 1999 14:41:10 -0400
From: BEN NOCK <G4BXD@compuserve.com>
Subject: TCS tx wanted
To: Old Tube Radios <boatanchors@theporch.com>
Message-ID: <199904061441_MC2-70CD-815F@compuserve.com>
MIME-Version: 1.0
Content-Transfer-Encoding: quoted-printable
Content-Type: text/plain; charset=ISO-8859-1
Content-Disposition: inline

I am looking for a TCS tx, any version, but must be complete and
located in UK or near continent.

cheers, Ben G4BXD
------------------------------------------------------------------------=

http://ourworld.compuserve.com/homepgaes/G4BXD/
------------------------------------------------------------------------=

------------------------------
Date: Tue, 6 Apr 1999 13:03:41 -0700 (PDT)
From: Ray Mote <rmote@rain.org>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re:  BA Odd Ends FS (Don Merz)
Message-ID: <Pine.SUN.4.05.9904061257240.3070-100000@coyote.rain.org>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

On the "Military Navy morale receiver 'Model 6000-BAC'", that
description sure sounds like the R-100/URR.  I'll bet the fiberboard
shelf that supports the chassis inside the cabinet has a schematic
painted on one side of it.  Might also be a small door in the back of
the case that swings open to reveal a rotary power selector switch,
spare fuses, etc.  I've seen 'em with and without the leather handles,
as well as with and without a small telescoping whip in a well in the
left front corner of the top.  The space below the fiberboard shelf is
where the batteries are stored.  My first one found a home with a W8,
and the last went up to Henry Engstrom (who specializes in the morale
receivers).

73....Ray Mote, K5FKT  <rmote@rain.org>  Oxnard, CA

------------------------------
Message-ID: <370A838A.A342B0F6@vifp.monash.edu.au>
Date: Wed, 07 Apr 1999 07:58:34 +1000
From: Morris Odell <morriso@vifp.monash.edu.au>

MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Caps on audio plates was: Line Voltage
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Hi,

Bobbi sez:

>    George asks why the designer didn't just hang the HF-killer condenser
> across the primary of the output transformer,

<snippage>

>  Only fix is to hang yet another
> (smallish) condenser across the filter (B+ to ground), of, say, 10X the
> value of the HF-killer, and there's another nickle spent on a part; which
> the sensible maker of AA5s (etc.) will not spend.
>    B+ rails *should* otta be at AC ground; but usually they're not all
> that good, especially for higher frequencies, unless extra effort is taken
> to make 'em be.

I mentioned there were only 4 paper caps in that economy set - one of them was indeed across the B+ line from the screen of the 6AQ5 to chassis. I'm quite certain the designer would NEVER have put it there if it wasn't absolutely necessary. Come to think of it, I should have tried running the set without it to see what happened :-)

73

Morris

------------------------------
Message-ID: <370A867D.4F16E39B@ix.netcom.com>
Date: Tue, 06 Apr 1999 17:11:09 -0500
From: David Stinson <arc5@ix.netcom.com>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Broken Band Switch Fix
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

> "Lon W. Cottingham" wrote:
>...I am trying to repair a SR# 5000+, Cedar Rapids

> manufactured, 75A4...
>The problem is that the forward wafer of the bandwidth
>(filter) switch has been broken.....

Lon:
I've tried lots of ways to fix this.  The only one
that worked well is a lot of trouble but gave me a
good, solid switch (this was a fiber switch- not ceramic).

I went to a hobby shop that sells RC airplanes and cars.
I got a packet of very thin fiberglass-looking strips
they use for patching holes and such.
There are carbon strips that are stronger and thinner
but I was afraid these might act like resistors.
They may indeed work well but I didn't try them.
Hobby shops also carry something called "ZAP-A-GAP" cyanoacrylic glue.
Unlike that useless "superglue" junk,  it has some type
of filler that allows it to fill gaps.  It works pretty well.

I used some modeler's clay to tack the edges of the
switch pieces in place on a flat surface.  You must
make sure they are exactly flat and level because
you ain't gonna straighten it out later.
I cut the fiber stuff to fit and layed it over the cracks,
then daubed-on the ZAP-A-GAP, which soaked through and made
it look like a wet bandage.
I used enough that it "wet" the break as well.
If you get it in the contacts,
I have not idea what will take it out.  So don't  ;-).
Once it dried I trimmed the excess,
turned the switch over and "bandaged" the other side.
I let it dry, trimmed again, cleaned the contacts
and re-installed.  Last I heard it was still working fine.

Hope this is some help.

73 Dave Stinson AB5S
arc5@ix.netcom.com

---
From: gwoods@albany.net (Gary Woods)
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Terminal (SS but heavy)
Date: Wed, 07 Apr 1999 01:15:30 GMT
Message-ID: <371db178.422812387@mail.albany.net>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Anybody want one of these for packet?  CRT is decent.
Free.

Boatanchor waiver application.  It weighs as much as a BC-348, and I need
the space for Real gear.

Pickup only (I ain't crating this beast!), Albany, NY area.
--
Gary Woods O- K2AHC   Public keys at www.albany.net/~gwoods, or get 0x1D64A93D via
keyserver
gwoods@albany.net gwoods@wrgb.com
fingerprint =  E2 6F 50 93 7B C7 F3 CA  1F 8B 3C C0 B0 28 68 0B

---
Date: Tue, 6 Apr 1999 22:01:40 -0500 (EST)
From: "Roberta J. Barmore" <rbarmore@indy.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: A and B batteries, rolling your own but not from scratch
Message-ID: <Pine.SUN.3.96.990406213227.25650A-100000@indy2>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hi, Gang!

   Some of us--well, me--still like to use batteries on small sets.  The
DC is sparkling clean (insert your own audiophile/phoole yakk here if
desired) and they're just more fun.
   Trouble is, have you priced a tall ol' #6 1.5V cell recently?  Or a
good B battery?  Yikes!
   On the other hand, every corner store's got AAA, AA, C and D cells
galore, and tons of the rectangular PP3 nine-volters.  But they're awkward
things to hook up with flying-wire leads.
   Sooo....with 6-5/8" of 2" PVC drainpipe, a couple of wood, masonite, or
plactic circles, a pair of RS D-cell holders and a scrap of wood to bolt
'em to, plus a little hardware, a person can turn out a nice physical
facsimile of a No. 6, with replaceable innards yet!  A little cranking
away on a fancy word-processor plus a color printer gives you a very fine
"Semperaut Super (the Radioman's Choice) Radio 'A' Battery, No. 6" with
genuine binding-post terminals and all!  (Tapping the walls of the pipe
longways for 4-40 bolts is the fussiest part, but you do want to be able
to open the thing up when the Ds go flat).  Note that 2" PVC is a little
skinnier than the real thing; you may be able to find something better.
   Stacking, tacking and boxing up PP3s for the B is a little trickier;
old manila or "oak tag" file folders can be cut and glued into decent
custom boxes, and another chunk of Sturdy Nonconductive Material Of Choice
to hold the binding posts plus a few yards of black plastic tape to

insulate it and hold the whole inner workings solid ends up with a decent if nonstandard size B block; a little more word-proceesing and the thing is done.  Alas, 45 is the first of the usual voltages you can hit easily; but if 27 will do in place of 22.5 and 72 instead of 67.5, it's not a bad way to go!  *Plastic* (or Bakelite) thumbnuts are a good idea for any B battery much over 45V, especially if the terminals are close together; or you can buy snaps of the same size as used on many of the old B batteries at many hardware outfits, or even maze up your own sockets.  (You're on your own there, 135V worth of PP3 batterage kicks like a mule and no warranty express or implied shall be construed from these comments: caveat fabor!  [Faber?  Fabtor?  Arrgh, foundered on the same ol' grammatical rocks.]

...I'll e-mail the artwork (Word for Windows .doc files) to anyone who asks.  The rest of the details are up to the builder.  I used red and white stripes; having almost hijacked the name from one battery maker (with the help of HS Latin, small wonder I snuck out with Cs!), it seemed only fair to borrow the general look of the artwork from another.  ;)

73.
--Bobbi

KB9GKX "RJ"  rbarmore@indy.net  Roberta J. (Bobbi) Barmore
FISTS #3388 * G-QRP #10001 * ARRL * RSGB * WIA
Appreciator Of Vacuum-Tube Ham Gear and Vintage Keys

---

Date: Tue, 06 Apr 1999 19:44:17 -0700
From: Arden Allen <gumbear@pacbell.net>
Subject: Re: Detective Work ......Inspector Couseau at the scene.
To: Old Tube Radios <boatanchors@theporch.com>
Message-id: <0F9S00L32SWJUX@mta1.snfc21.pbi.net>
MIME-version: 1.0
Content-type: text/plain; charset=ISO-8859-1
Content-transfer-encoding: 7bit

Clouseau would always fumble his way to the truth.  And so shall we (shades of John McLaughlin).  Why has no one mentioned the radios that have the capacitor across the output transformer thus removing the B+ burden on the cap?  It seems those caps seldom failed compared to the plate-to-ground unfortunates.  Aaahhh-HA!!  Now we know the reason for failure.  Heating of the capacitor internally caused by the power dissipated from the leakage current slowly heating the capacitor (the heat from the nearby 50L6GT egging it on) until.....(French expletive deleted).....Thermal runaway!  Leakage currents caused by the AC component in caps across the output transformer primary don't produce enough heat to destroy caps, even pretty leaky ones, it seems.

Arden  Allen  KB6NAX  Vallejo, CA  gumbear@pacbell.net

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Message-Id: <199904070315.UAA02003@mailman.cisco.com>
Date: Tue, 06 Apr 1999 21:19:43 -0600
To: Old Tube Radios <boatanchors@theporch.com>
From: Mark Richardson <Mark.Richardson@cisco.com>
Subject: RE: Unknown receiver
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Well gang I had a request from a DX contact, to find a schematic and manual for a Marconi receiver model CR150/6.
I have never heard of it. Anybody know what it is and where I could obtain the information?

Many Thanks

Mark
W7HPW


Mark Richardson
Systems Engineer
746 East 6600 South
Suite 140
Salt Lake City, Utah 84107

Office 801 270-6606
Cellular 801 361 3097


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Message-Id: <3.0.6.32.19990406204154.007cd5d0@mail.willapabay.org>
Date: Tue, 06 Apr 1999 20:41:54 -0700
To: Old Tube Radios <boatanchors@theporch.com>
From: David Ross <ross@hypertools.com>
Subject: Re: A and B batteries, rolling your own but not from scratch
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Roberta and the gang -

A real good source for funny old batteries is:

http://www.voicenet.com/~sgphoto/

  Go to this link, then click
Neat Non-Photo Stuff
  then click
BATTERIES

  I've seen these folks at Dayton several times, always with lots of military batteries.  Their website currently lists:

45 volt "B" Batteries:
BA36-& BA53, BA63, BA59 & BA806

1 1/2 Volt "A" Batteries:
The Good olde #6 cell! - BA23, BA401- 1 1/2volt "F" cells, BA405 - 1 1/2 volt BA404 - 1 1/2 volt, BA65 - 1 1/2 volt, BA802 - 1 1/2 volt, BA833 - 1 1/2 volt.

4 1/2 volt batteries for making 9 volt packs
BA31 - 4 1/2 volt, BA9 - 4 1/2 volt

Smaller batteries for meters & other equipment
BA 261 - 22 1/2 volt, BA 331 - 15 volts, BA332 - 15 volts

Batteries for Military Radios & other interesting equipment:
For PRC 77 transmitter-receiver, For PRC 70 transmitter-receiver BB542
For PRC10, 11 etc. BA279, For PRT-4: BA399, For PRR-9: BA505
For Military strobe light: BA1574, For Night Vission Goggles: BA5567

Standard alkaline batteries with authentic G.I. packaging
Alkaline D batteries BA3030, Alkaline C batteries BA3042

Commercial Lantern Batteries:
Standard 6 volt lantern batteries, Eveready 7 1/2 volt lantern batteries

  BTW, if you're looking for PRC-25 or PRC-77 batteries, Fair Radio has unused lithium batteries for $6.50/pair.  Mine came with an expiration date of 1995, but they are still _very_ healthy.

73
Dave Ross    N7EPI    ross@hypertools.com

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Message-Id: <199904070417.AAA23168@flash.naxs.net>
From: "Barry L. Ornitz" <ornitz@tricon.net>
To: Old Tube Radios <boatanchors@theporch.com>

Subject: Re: High Voltage Coupling Capacitors
Date: Wed, 7 Apr 1999 00:16:11 -0400

On the subject of "across-the-line" capacitors, Arden wrote:

>You overlooked on important factor. The across-the-line capacitors
>are really rated to withstand 1500VAC (2121V pk) and 2500VAC (3535
>V pk)(depending on class) Hi-Pot testing, usually for a minute, as
>required to meet UL, CSA, TUV and bushels of other safety agency
>requirements. Products are 100% tested for dielectric withstand
>capability as a screen for defects, usually associated with product
>assembly errors. So the caps gotta take it in the shorts (twisted
>pun intended) to survive. I have 250VAC caps in both of my
>Heathkits and no problems......yet.

I asked Arden for more information and in a later he note, he said he had likely confused the capacitors for medical use with the capacitors designed to meet UL-1414 specifications for across-the-line safety use. I tried to locate this Underwriters Laboratory specification, but like most standards agencies, they now want to charge big bucks for everything. So I went looking for information by capacitor manufacturers and thought I would write something about what I learned.

There are actually three types of these safety capacitors. The "X" version is for line-to-line connection and comes in two flavors: one for permanently connected equipment (X1), and the other for equipment designed to be plugged in with a removable line cord (X2). The "Y" version is for line-to-ground connections. The UL standard which is used most often in the USA seems to have the least stringent requirements, while some of the European and Asian standards are much more difficult to obtain. [I used to do considerable work with intrinsically safe and explosion-proof equipment. Here too, the European specifications are much safer than the US ones.]

These safety capacitors are either ceramic or metallized film capacitors. They are NOT foil and film types. This is because the metallized film can puncture in a spot vaporizing the metal and often survive. The metallization cannot carry very high values of current so a dead short is unlikely. The older foil capacitors could pose a high hazard here so they are not allowed.

The ceramic capacitors are limited to relatively small capacitance values. It is rare to see them larger than 0.005 uF for these applications. The metallized film capacitors can have much higher values.

However, the actual testing procedures used by different manufacturers are radically different. Yet they all pass the same UL test and are rated for approximately the same voltage (250 to 275 Vac). I have summarized some of

the information in a table below.  Based on this information, I would be extremely hesitant to trust these capacitors in a critical circuit above 1000 volts DC.  And even then, I would want to see the manufacturer's data for the particular model capacitor used.  Taking a random across-the-line capacitor and using it for HV DC is asking for trouble.  You might get away with it, but you might not - and wind up with other component damage too. Note that short tests, i.e. less than 10 seconds, do not allow the capacitor to heat much where its leakage current increases significantly. Print the table in a fixed width font.

Basically if you need a high voltage DC capacitor for bypassing or very light filtering, you should get one rated for the application.

73,  Barry L. Ornitz     WA4VZQ     ornitz@tricon.net

| Manufacturer | Type | Rated | Tested |
|---|---|---|---|
| Nissei-Arcotronics | Metallized Film | 275 Vac | |
| Radio Materials Corp. | Ceramic | 125 Vac | 2800 Vdc - 1 sec |
| Panasonic | Metallized Film | 275 Vac | |
| Pan Overseas Electric | Ceramic | 400 Vac | |
| Jenn Fu Electronics | Metallized Film | 275 Vac | 1200 Vac test |
| Tae Electric Inc. | Metallized Film | 275 Vac | 1200 Vdc, 60 sec<br>2000 Vdc, 1 sec |
| Revox Rifa | Metallized Film | 250 Vac | 4000 Vdc, 2 sec<br>recommended <1000 Vdc |
| Paktron | Metallized Film | 275 Vac | 1200 Vdc, 3 sec |
| Carli Electronics | Ceramic | 250 Vac | 2000 Vdc, 1 min |
| Korea Electronics Co. | Ceramic | 275 Vac | 1500 Vac, 1 min |
| Ceramite | Ceramic | 250 Vac | |
| Dain Electronics Co. | Metallized Film | 275 Vac | 2000 Vdc, 1 sec |
| ASC Capacitor | Metallized Film | 250 Vac | 440 Vac, 1000 hr |
| Murata Electronics | Ceramic | 250 Vac | 1500 Vdc, 1 min |
| Samsung | Ceramic | 250 Vac | 2600 Vac, 1 min |
| North American Cap. | Ceramic | 125 Vac | 3250 Vac, 1 min max |
| (Mallory) | Metallized Film | 250 Vac | |
| Philips | Metallized Film | 275 Vac | 3400 Vdc, 1 sec |
| Illinois Capacitor | Metallized Film | 275 Vac | |

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End of BOATANCHORS Digest 2494
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